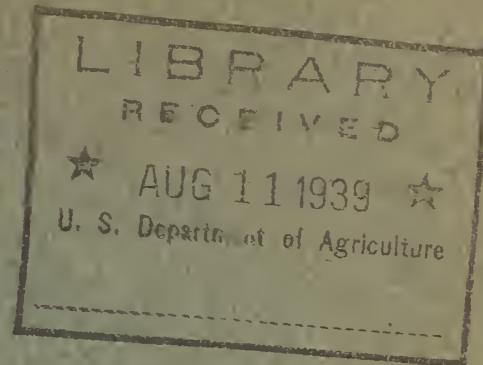


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UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
Region Eight
Albuquerque, New Mexico



Hugh G. Calkins
Regional Conservator

A REPORT ON THE CUBA VALLEY

Regional Bulletin No. 36
Conservation Economics Series No. 9
March, 1937

UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

July 31, 1937

Mr. H. G. Calkins
Regional Conservator

Dear Mr. Calkins:

Transmitted herewith is a report on the Rio Puerco Drainage, its land-use history and its present-day economy.

Part One of the report, containing the general description of the area and a brief history of its settlement, was prepared by Mr. Ernest E. Maes. Part Two, dealing with land economy and the problem of livelihood in the area, is in part based on an analysis and interpretation of the Soil Conservation Service Human Dependency Survey and is the work of Mr. L. H. Fisher.

This study was projected and the actual preparation of the report begun some time before the creation of the Interdepartmental Rio Grande Committee. The material contained in this paper, however, relates to the work of the Committee in such a significant manner that I hope I may have your permission to include it among our contributions to the Committee's forthcoming report.

Sincerely yours,

Eshref Shevky
Section of Human
Surveys

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
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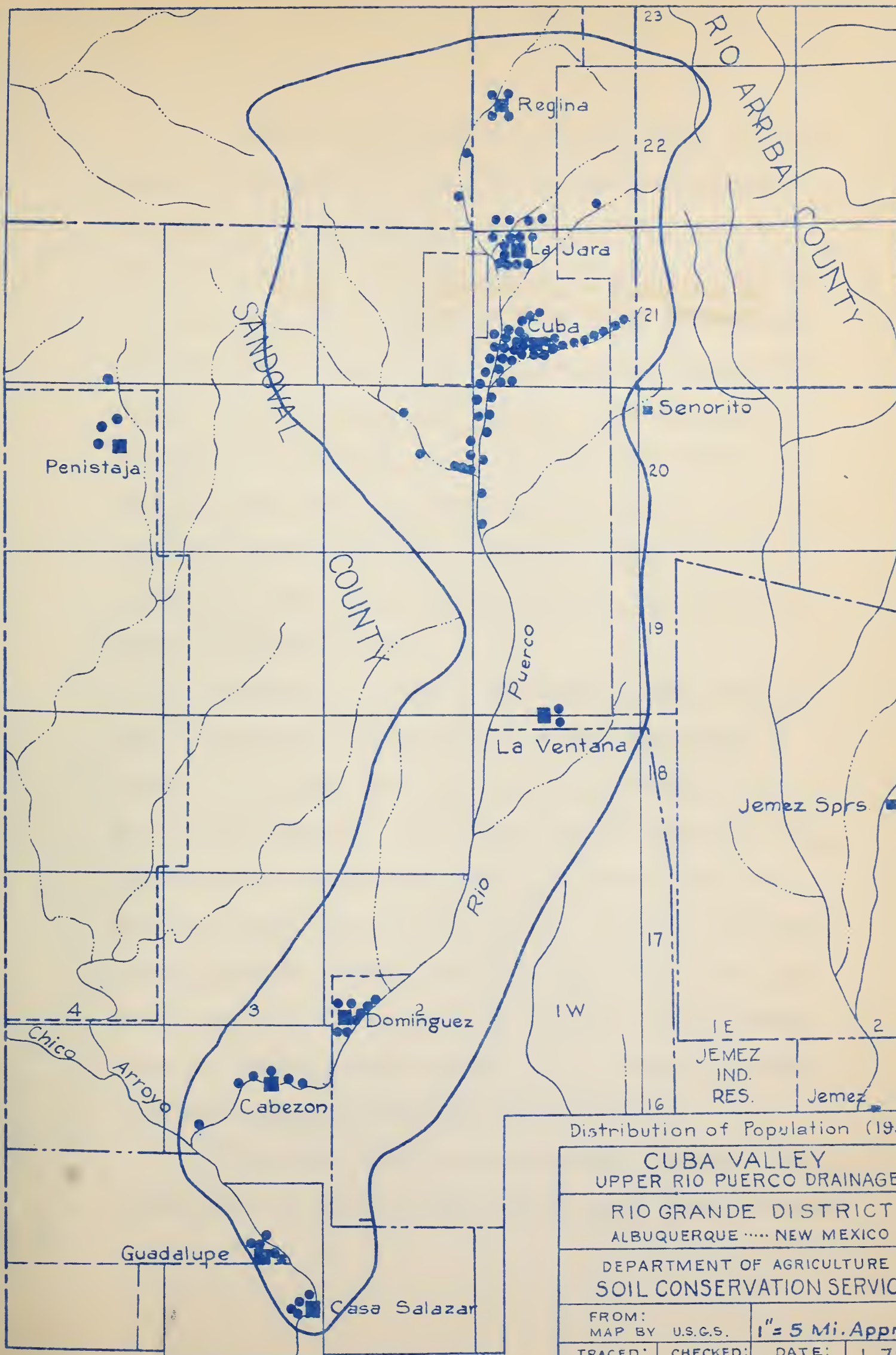
PART I

GENERAL DESCRIPTION AND HISTORY

OF THE

UPPER RIO PUERCO DRAINAGE

Figure 1 - Distribution of Population in
the Upper Rio Puerco Drainage



Distribution of Population (1936)

CUBA VALLEY
UPPER RIO PUERCO DRAINAGE

RIO GRANDE DISTRICT
ALBUQUERQUE NEW MEXICO

DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

FROM:
MAP BY U.S.G.S.

1" = 5 Mi. Approx.

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The Rio Puerco begins as the main stem of an intermittent stream system flowing fan-wise from the Nacimientos Mountains on the east and from the Continental Divide on the north and west. Its upper course extends in a north to south direction from Townships 23 N. to 15 N., and meanders east and west on Ranges 1 and 2 W., New Mexico Principal Meridian. It has two population centers: Cuba and Cabezón. The former includes Cuba, Regina, La Jara and a cluster of villages around Cuba; the latter includes Cabezón, San Luis, Guadalupe and Casa Salazar. La Ventana, a small mining village, is midway between the two centers. The entire region is in Sandoval County.

The area is served by State Highway #44, and by a spur of the Santa Fe Railroad which reaches San Ysidro, a village on the Jemez River some 20 miles southeast of the upper Puerco watershed. The highway ascends gradually in a northwesterly direction from Bernalillo, county seat of Sandoval County, into an area of sparse vegetation characterized by sandy dry washes. It then descends and follows the course of the Jemez River past the lean lands of the Pueblos Santa Ana and Zia, and the village of San Ysidro, and thence northwest through Ojo del Espíritu Santo Grant.

This grant is one of the Government purchased areas, 116,000 acres in extent. After a sharp ascent about one-fourth

of the way through the grant, Cabezon Peak, the landmark of the Cabezon Area, may be seen some eight miles to the west. A spur of the highway serves the villages of Cabezon, Dominguez, Guadalupe and Casa Salazar, the main highway going directly to Cuba and beyond.

The uppermost portion of the Puerco Drainage is known as the Cuba Valley. It is surrounded by mountains on the east, by hills on the west and north, and by a low mesa, through which the Rio Puerco has cut a deep gash, on the south. Some of the older residents claim that about 75 years ago this portion of the Puerco only drained off the Cuba Valley at flood time. Most of the year, they claim, the run-off from the side washes and creeks lost itself in the marshy meadows at the bottom of the valley. The village of Cuba, the only considerable trading center in the area, unobtrusively occupies a small corner of the valley east of the Puerco and north of the Nacimiento Creek. It has a dilapidated run-down appearance, and its faded false-front architecture help to date the period of its prosperity. From Cuba in all directions there are small scattered clusters of houses, each with its name, from San Miguel on the south, to Sonorito on the east, to Regina on the north, and to Penistaja on the west.

The land is chiefly characterized by the spectacular nature of the gully erosion everywhere present. Around Cuba

La Jara some 5,000 acres have been broken for cultivation. About 4,000 acres of this land are under ditches leading from the Puerco and the intermittent streams draining into it from the east and north. The four chief drainages are, from south to north: the Nacimiento, the Leche, the Puerco, and the La Jara Creeks. Leche and Nacimiento Creeks join just southeast of Cuba, and enter the Puerco two miles southwest of Cuba. La Jara Creek enters the Puerco from the north above Cuba. There are sixty landholders using water out of the ditches from the Nacimiento, twenty out of the Leche, fifty out of the upper Puerco, and approximately forty out of the La Jara.

None of these streams furnishes water later than the latter part of June, and all of this land may be considered as only semi-irrigated or flood-irrigated. The cultivated land at Regina and Penistaja is dry farm land, as is the land on the Puerco just south of Cuba, where the last dam was washed out in 1926. About 1,000 acres are under cultivation at Regina, and some eight hundred acres of dry land are under cultivation at Penistaja.

The altitude in the Cuba area varies from 7,000 to 7,500 feet, and the annual precipitation is fifteen to sixteen inches. The residents claim that the economic decline of the area is due to the decline of the local stock industry, and to the dearth of water. The lack of water, they explain, is the result of a lowered water table and a gradual drying up of the

streams. At present, the chief sources of irrigation water on the Nacimiento and Leche Creeks are the Rio de las Vacas and the Rito Claro, which streams are not on the Puerco drainage, but on the Jemez River drainage. The water is diverted by means of three diversion ditches from the Rio de las Vacas to the Rito Claro, and from the Rito Claro to the Leche and Nacimiento Creeks. The ditch from the Vacas to the Claro is a very difficult one to maintain. All the water rights of this creek are registered.

The cultivated land of the Cuba area is surrounded by grazing lands. To the east are the Nacimiento Mountains; to the west and north are the hills, rising gradually to the Continental Divide; and to the south are hills and grassland flats. Most of this grazing land is public domain, national forest, and Indian reservation.

Some thirty miles south and eight miles west of the Cuba Valley is San Luis (or Dominguez) the northernmost of the four villages that make up the Cabezon area. These villages, as has been stated, are San Luis, Cabezon, Guadalupe, and Casa Salazar. They extend in the order named twenty miles along the Rio Puerco. Some thirty years ago, the inhabitants claim, this area was a garden spot, and they swear, with singular unanimity, that the land is as fertile as can be found in the entire State of New Mexico. Drab, gray, and depressing is the area today. The small adobe houses hold tight to the barren

earth of the valley, and only a surrounding mound of disintegrated adobe differentiates the deserted from the inhabited houses. A bit of scarlet quilting now and then fluttering from a fence or clothesline is the only color.

The deepening, widening channel of the Rio Puerco winds through the area, and every rain storm extends the side gullies further towards the edge of the valley. The Arroyo Chico, with a drainage area equal in extent to that of the Puerco, joins the Puerco just below Guadalupe. That arroyo carries a more constant supply of water than does the Puerco. In times of flood, the two streams together carry tremendous amounts of silt and water. This portion of the Rio Puerco appears to be rapidly widening, as well as deepening, its channel.

Cabazon is the post office and trading center for the area. It is located on a strip of land between the hills and the Rio Puerco on the west side of the river, and the entire village is in a sad state of disrepair. Altogether there are some forty houses in varying stages of disintegration. A recent fire left only the blackened adobe walls standing of the largest building--the dance hall. The other villages are all scattered farmsteads.

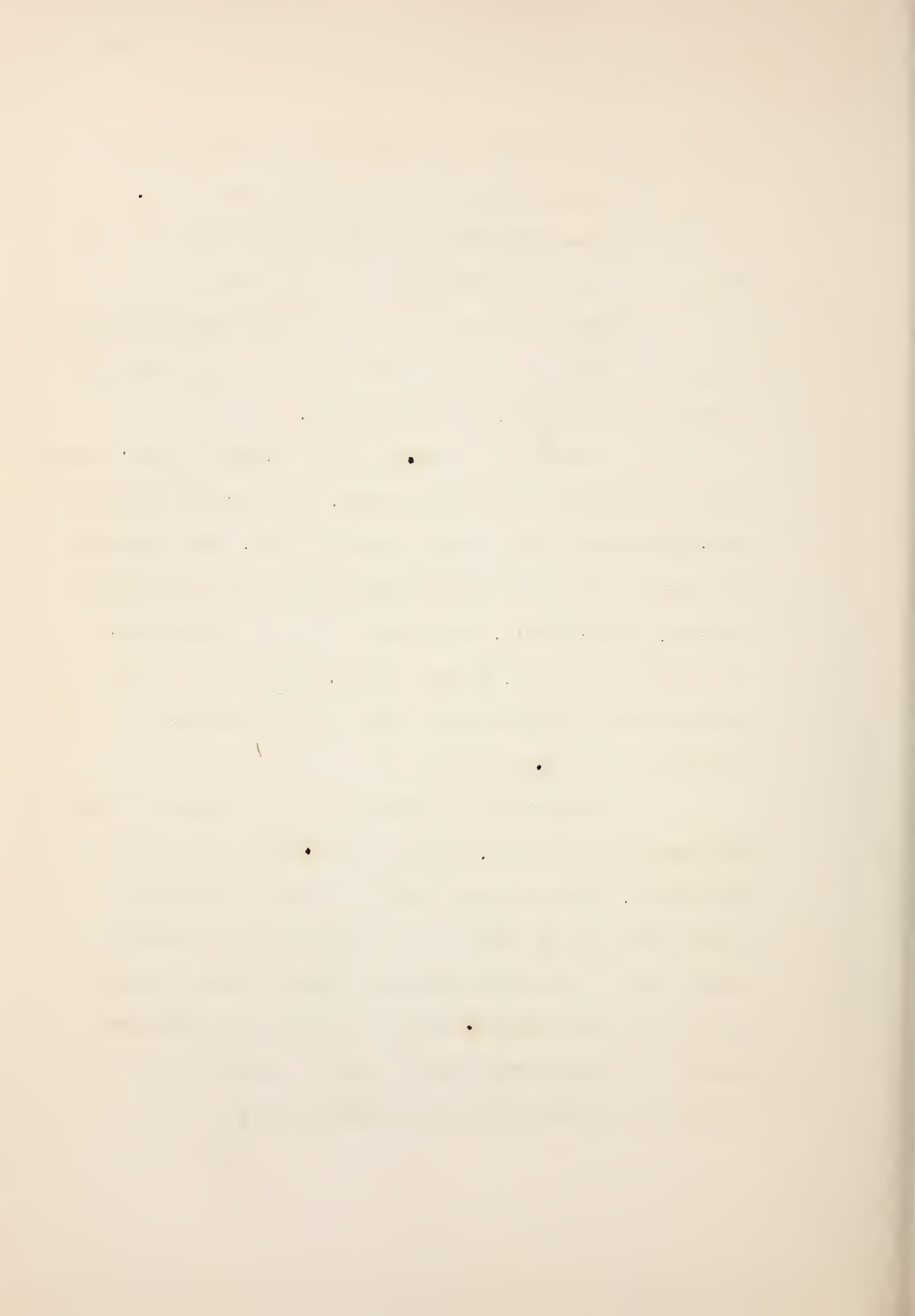
There have been irrigation dams on the Puerco at all the villages in the past. The last of these old dams, the one

at Guadalupe, went out in the early spring of 1936, so that all of the farming in the area that year was dry farming.

The Works Progress Administration built a dam at Dominguez in 1936, but the ditch was not completed early enough to be of use. Some 2,000 acres of land have been under irrigated cultivation at one time or another in the four villages. The crops in 1935 were fair, in 1936 extremely poor.

The altitude at Cabezón is about 6,000 feet, the annual rainfall between ten and twelve inches. The farming area is entirely surrounded by extensive grazing lands. The Espiritu Santo Grant is to the east; the Ignacio Chavez Grant and some railroad, public domain, and patented land is to the south; the Navajo Reservation, railroad lands, public domain, and patented homesteads are to the west; and public domain and patented land are to the north.

The village of La Ventana is what is left of a bankrupt company's coal camp, located just north of the Espiritu Santo Grant. The mines were first opened up for extensive mining operations in 1926 by a New Mexico company, and the first whiff of depression closed the mines in 1931. At present two or three months of mining for independent truckers furnishes employment for about one hundred miners who live in the miserable shacks during the working season.



A. Brief History

The Upper Puerco drainage was a grassy wilderness in 1845. At Cuba swampy vegas formed where the small streams reached the bottom of the valley, and the Upper Rio Puerco was a small permanent creek of clear water and willow-lined banks. A few Apache Indians to the north, the Navajos to the west, a few hunters and trappers from Bernalillo, and occasional sheepherders with small bands of sheep from Los Padillas, south of Albuquerque, were the only users of the area. About 1848, Jose Leandro Perea moved to Bernalillo from Los Padillas. He had ten or twelve thousand sheep. By 1853, in spite of Navajo depredation, his herds had increased to the point where he was running approximately 50,000 sheep in the Jemez River country during the summer, and in what is now the Ojo del Espiritu Santo Grant and the railroad lands and public domain to the southeast during the winter.

In 1862, Mariano Otero, a nephew of J. L. Perea, moved to Bernalillo. He had several thousand sheep and almost 1,000 cattle. He entered into partnership with Perea, and their herds, with extensive grazing lands available, multiplied very rapidly. By 1865 they had approximately 15,000 sheep together. The partnership dissolved when old man Perea died, some time during the late sixties. After 1870, the two dominant outfits in the stock industry in the area were those of Mariano Otero and Mariano Perea, the son of J. L. Perea. They roughly divided the Upper Puerco drainage into spheres of influence. Otero kept his herds

west of the Puerco and Perea took his to the lands on the east side, including the Nacimiento Mountains. In 1870, Perea established headquarters at the La Jara Ranch, at what is now the village of La Jara. Otero maintained headquarters at the Espiritu Santo Grant and at the Las Lagunitas Grant. He kept his headquarters at Bernalillo. Thus, in 1870 the Perras and the Oteros were in control of practically all the area. Otero had 90,000 sheep and 9,000 cattle, and Perea had 150,000 sheep.

From 1850 to 1880 the chief buyer of wethers produced in the Rio Puerco area (there was no market for lambs until after 1892) was the United States Government. First for the Army, and, after 1864, for the Indian Service, when the latter began feeding the Navajo Indians at Bosque Redondo. For a long time there had been extensive traffic in sheep from other parts of New Mexico, as witness the periodic drives to California, and, before that, to Mexico; but it was not until the coming of the railroads in 1882, when the eastern markets were opened to New Mexico wool and mutton for the first time, that sheep from the Puerco area were extensively marketed outside New Mexico.

About 1860, a mail line was established by the Federal Government from Santa Fe to Pena Blanca, from Pena Blanca to Bernalillo, from Bernalillo to Cabezón, and from Cabezón to Fort Wingate. Two Germans were given the postal contract, and

they established a station at Cabezon, which place they called La Posta. The place became a trading center for the sheepmen and cattlemen working for Otero in that area. A few farmers moved into Cabezon from Pena Blanca, on the Rio Grande, already becoming over-crowded, and began farming there. This movement became extensive after the Navajos were defeated at Armijo Lake in 1864. The new farmers constructed extensive irrigation systems for their new lands. In those days it was a very simple matter to divert water from the Puerco, inasmuch as it had cut no deep channel. Soon after 1864 other settlements were established up and down the Puerco. In 1868 Andres Romero from Pena Blanca placed his possessions and his family aboard an ox cart and after three weeks of arduous travel arrived at La Jara. Romero was a dirt farmer and he was looking for some land to plow and plant. He liked the region, and proceeded to develop a farm. Other people followed, and by 1878 there were 20 families in the area. All were named either Romero, Sanchez, Padilla, Cordova, Atencio, Salazar, or Garcia.

Typical is the story of Juan Jose Salazar. The Salazar family had lived in the Pojoaque Valley since its earliest settlement. In the spring of 1878 Juan Jose's father decided to move, as the land at Pojoaque had been sub-divided so often that the strip belonging to Juan Jose's father was no longer

adequate for his constantly increasing family, then numbering twelve, including himself and his wife. He loaded six mattresses and a few tools and other belongings on some burros, and headed across the mountains to Cuba. The previous fall the uncle, who had moved to Cuba two years before, had told Juan Jose's father there was plenty of land and water there. The Salazars arrived late in March, and the uncle, who was very much surprised at their arrival, told Juan Jose's father that he could break the land adjoining his own. The uncle allowed him the use of his oxen. During late spring and that summer, Juan Jose's father made two trips; the first trip was to Santa Fe where he went to Clerk Mariano Sena's office and told him he wanted title to the land he was using. Clerk Sena wrote out a title on a plain piece of paper, which Juan Jose considered adequate until the land was declared public domain in 1908, and the people in Cuba took out patents on their land from the General Land Office. The second trip was back to Pojoaque, where Juan Jose's father got ten cows on shares (one-half the calf crop) and some seed from his erstwhile neighbors. That first crop was excellent, according to Juan Jose. After the harvest, his father hired out Juan Jose, who had reached the ripe age of twelve years, to one of Poree's mayordomos, a bandit by the name of Pantaleon Miera. Juan Jose worked a full year at \$12.00 per month. When the year

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was up, Pantaleon came to the sheep camp and told Juan Jose that the next time he came out he would bring him the \$144; or, if Juan Jose didn't want to wait, Juan Jose's father could get wethers at \$1.25 each to make up the sum. After much deliberation Juan Jose's father decided that, although he needed the cash, he couldn't afford to wait for it so they took the wethers. A good thing, too, because Pantaleon was hung by the vigilantes at Bernalillo before he ever did get up to Cuba again.

That fall the whole Salazar family paid a visit to their relatives in the Pojoaque Valley, and they were able to dispose of the wethers at a profit there. Then and there, Juan Jose decided that his line was not farming, but dealing in wool and sheep, a business that he has followed to this day.

It is apparently typical that in those early days the older generation of settlers, the men who moved there, were farmers, but the sons went into the stock industry. The only cash at a time when money was entering the economy for the first time, was to be had in livestock. There was no market for local produce other than the large stock outfits, and this market was limited because the sheep and cattle depended entirely upon range grass. The only feed bought was for the many horses that the Oteros and the Pereas kept. Mariano Otero bought 25,000 to 30,000 pounds of corn at Cabezón each year.

When people began settling in the area, Otero and Perea began giving out sheep on the partido basis, (1) and by 1897 Otero had 60,000 sheep out. In those days the partidario, or renter, paid two pounds of wool per sheep rental, and, according to Mr. Fred Otero, a son of Mariano Otero, the owner took all the risks. The extent of risk, according to the same informant, is indicated by the fact that of the 60,000 sheep that Mariano Otero had out on shares, his heirs received only 28,000 when they liquidated his holdings after his death.

The grazing restrictions imposed on the Jicarilla Apache Reservation, which had been established in 1881, but which Otero and Perea had used unrestrictedly until 1890, and the further grazing restrictions on the Navajo Reservation and the private land grants and other private lands in the area gradually forced the Oteros and Pereas to contract. Perea died in the late 90s, and his heirs soon liquidated his holdings in livestock. Mariano Otero died in 1904, and the last of his herds was sold to a Colorado outfit by his heirs in 1907. In 1904, when Mariano Otero died, there were thirty independent small sheepmen in the area with an average of

(1) By partido basis is meant the arrangement whereby the owner rents out stock capital at a rate fixed by contract. This rate today is usually 20 lambs per 100 ewes per year. The age of the breeding herd must not increase.

1,000 sheep each, and a large number of small cattle owners.

After 1870 the settlement of the lands along the Puerco continued. Cabezón was a flourishing trading center, with three stores and seven saloons by 1890; the lands on the Nacimiento and Leche Creeks at Cuba were well settled, and the people there had already built the diversion ditches from the Rio de las Vacas to their own drainages. Accelerated erosion had set in on the Puerco.

About 1890 the Fruitvale Colonization Company was formed by a group of men from New Mexico, New York, Chicago, and London. A shady title to the Montano Grant was acquired (no partition of the grant had taken place and there were 1,000 heirs), and beautiful word pictures began to appear in English papers describing the permanent streams, the rich soil, the vast possibilities for agriculture, and the health and happiness that awaited people with money to invest at Fruitvale on the Rio Puerco. Some fifty people, most of them retired small business men from London and New York, invested money and moved from their homes to Fruitvale. In 1892 there were thirty families, mostly English, on the project. Very few of these people had any knowledge of farming, or of stock raising. The company built a miserable dam, which never diverted water to the land, across the Puerco, and all the

people on the project were soon bitterly disillusioned. The company declared itself bankrupt in 1895. Probably ten per cent of the invested funds had been used in development; the rest was misappropriated.

Settlements, all of which are now abandoned; had developed on the Puerco below what is now Casa Salazar by 1900. The land was fertile, and it was still no difficult matter to raise water out of the Puerco for irrigation. Cuba was developing rapidly, and by 1900 had become a wheat and corn growing center. The excessive numbers of stock which had been on the ranges, and which still continued, had already sealed the doom of the area by destroying the grass cover on the dark, easily eroded soil. The farm operations in the area were then, and have continued to be to this day, more or less supplementary to the grazing of sheep and cattle, upon which activity the people depended for the bulk of their cash income. Apparently the only period when there was a considerable marketing of local produce outside the area was during the World War when large shipments of oats and other grain to Bernalillo were made. After the war, local agriculture merely supplied local needs; and, since 1926, a rapidly decreasing agricultural production has failed to supply the local feed market, or even the local food needs. The most significant factor in the agriculture of the area

since the war has been the large influx of homesteaders who filed claims on the public domain, north and west of Cuba.

The story of the sheep industry in the region after the heyday of Otero and Perce is the story of three men and the Bond Company. First, there is J. H. Matthews. He arrived in Cuba in 1883 with only a buckboard, two horses, and a small stock of patent medicines. In three years he had established a small store and started trading in lambs and wool in a modest way. He dealt mostly with the small independent sheepmen, offered them credit when they needed it, helped them with small loans at times. He was well repaid in lambs and wool. Lambs became marketable in 1892, and Matthews became the largest independent lamb buyer locally. He took his lambs and wool to Chama and Bernalillo and made considerable shipments. He left the area in 1897 with 14,000 sheep and lambs which he took as far as Kansas City where he disposed of them. With the proceeds he set up as a grocer in New York City, and when he failed in business there in 1900 he shot his brains out.

Epiménio Miera was a bright local boy who started his working life as a very young shepherd. He never turned down an opportunity, and when he heard of a widow with 1,000 sheep and some land in Bernalillo, he quit his job as herder, went down to Bernalillo, and married the lady. In 1897 he took

the 1,000 sheep and bought out J. E. Matthews, who wanted to return East. It took all the 1,000 sheep, but Miera was started as a trader. In December, 1898, two Englishmen had bought 2,500 head of sheep from Perea at \$1.25 each. By the last of January, 500 had frozen; and, thoroughly discouraged, they offered Miera the 2,000 left at 75 cents each. Miera hurried to Albuquerque where he talked so persuasively that the bank allowed him the money on a mortgage on his store and on 500 sheep. Miera bought the sheep in March, 1898, and in May, 1898, he got a 90 per cent lamb crop. This liquidated his debt to the bank, with a little left over. In 1900, Miera bought 8,000 sheep from the brother of Mariano Perea, and by 1904 he had 32,000 sheep which he ran himself, and was, next to Augustin Iechwald, the richest man in Cuba. When he died in 1913, he had \$100,000 in the bank and 15,000 sheep.

Augustin Iechwald arrived in Cuba in 1885. He peddled tinware and utensils, and he had enough capital to set up a small store. In 1890 he began trading store goods for sheep and cattle, and to deal in wool and hides. He set up a brokerage business, gathering together large stores of local grain, and exchanging it for wool, hides, sheep, lambs, or anything to the sheepmen. By 1904 he had 20,000 sheep. He opposed free schools on the ground that he could always send his boys to school in Albuquerque anyhow, and that free schools would

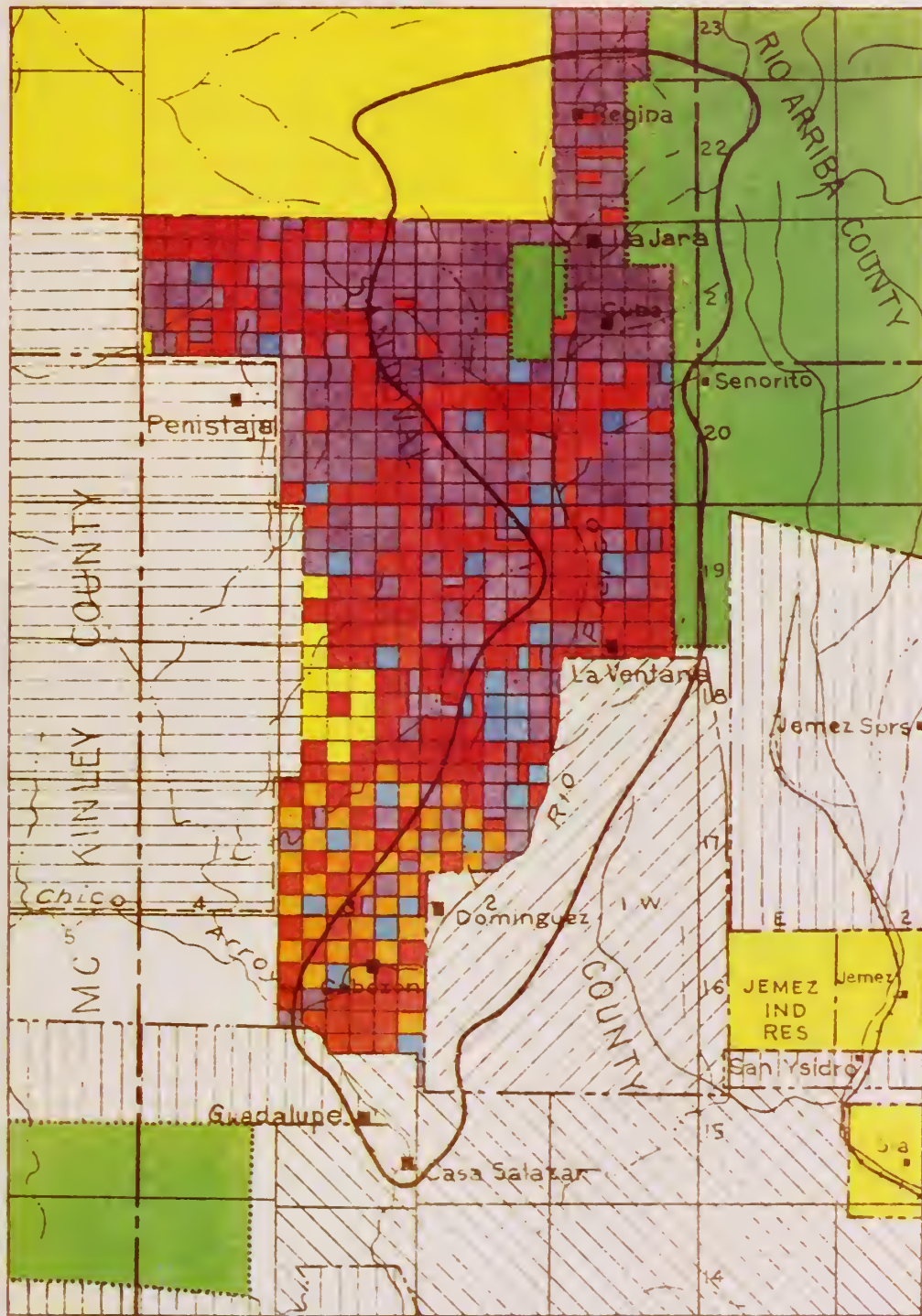
take away some of their advantage in Cuba; and he opposed roads on the ground that if the people ever got out of Cuba they would become too "high-toned" to be good shepherders. When he died in 1926 he had \$150,000 in the bank, and 15,000 sheep. F. Bond bought the last of Iechwald's sheep, 2,800 of them, in 1923, from Mrs. Iechwald.

Frank Bond was an established sheepman in Rio Arriba County when he first visited the Cuba area in 1905. He began buying wool at that time from the small independent stockmen. By the time he set up a store in Cuba in 1912, he had excellent relationships with the small sheepmen in the area. He maintained his establishment in Cuba as a dealer in wool, hides, and lambs until 1920 when he began offering the smaller independents, those who had 300 or 400 sheep, an equal number of sheep on shares. He moved his mercantile establishment out of Cuba in 1922, but his sheep dealings increased. He began buying Miera and Iechwald sheep, and increasing the number of his partidarios. The partidario guarantees the owner's sheep with his own, and in that light it is easily understood why after the disastrous winter of 1928, when nearly one-half the sheep in the area froze, a large percentage of the entire sheep industry became concentrated in the hands of the Bond Company. There are only a few independent sheepmen, having from 300 to 1,000 head each, in the entire upper Puerco area today. In 1928, Bond started the practice of requiring his tenant-herders to feed cotton seed cake. This practice is now prevalent through the entire region, and it has ruined the local market for feed.

PART II

THE CUB. VALLEY

Figure 2 - Land Status in the Cuba Valley



STATUS MAP

- Patented land
- Railroad land
- State land
- Public Domain
- Private land grant
- Proposed Navajo Extension
- National Forest
- Indian Land
- Predominantly Railroad & State Land
- Government Purchase Area
- Cuba Valley

CUBA VALLEY			
RIOGRANDE DISTRICT			
ALBUQUERQUE — NEW MEXICO			
DEPARTMENT OF AGRICULTURE			
SOIL CONSERVATION SERVICE			
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RESOURCES IN THE CUBA VALLEY

When early settlers moved from Pena Blanca and the Pojoaque Valley into the Upper Puerco Drainage, they found near the headwaters new land and a small permanent creek of clear water and willow-lined banks.

But these settlers who arrived in the Cuba Valley from 1875 to 1900 were propelled by no unique set of influences. What had happened to them early was to happen to larger groups later. Migrations continued. The stream of settlers swelled rather than diminished. Over-crowded areas continued to eject surplus populations, and fifty years from the date of first settlement the Cuba Valley offered no further opportunity for settlement.

The Spanish-American settlers in the Cuba Valley must have imagined a permanent resource in the fertile soil and the silt-free water of the valley. And yet, within a comparatively few years after settlement the process of deterioration set in. The clear waters muddied; the Puerco and its tributaries began to cut into the ground. The river channel which had formerly carried water to the surrounding lands now began to drain them. Springs became wells. Settlements were abandoned, and moved to less damaged areas.

The residents of the Cuba Valley are by no means spread evenly along the watercourse at present. Of the 2,500 persons

who live in the Cuba Valley 75 per cent are concentrated around the headwaters of the Puerco. Then follows in a southerly direction a long stretch of land uninhabited except for shacks which house itinerant miners working in the coal mines at La Ventana. The remaining population extends from San Luis to Casa Salazar, a distance of twenty miles.

Although much more could profitably be known about the origin and growth of population clusters in the Cuba Valley, one determinant factor is evident--the availability of cultivated land. What water the Rio Puerco can contribute to the agricultural activities of the valley is contributed near the headwaters. Therefore, the major portion of the population is to be found at the sources of the Puerco. A glance at Table I will make this clear.

The existence of any concentration of population in the lower valley must be explained primarily in terms of the once-existent resource in irrigated land, now destroyed through erosion, plus the absence of any alternative livelihood which might be realized through migration. The dam for impounding irrigation water at San Luis washed out in 1936; the dam at Cabezón was destroyed in 1912.

(1)

In a recently published report by Cooperrider and

(1) Cooperrider & Hendricks: Soil Erosion and Stream Flow on Range and Forest Lands of the Upper Rio Grande Watershed in Relation to Land Resources and Human Welfare, Table 1, page 15. U. S. Department of Agriculture, Washington, D. C., 1937.



Table I

POPULATION CONCENTRATION IN CUBA VALLEY - 1936

Source: Soil Conservation Service Human Dependency Survey

Area	Population	Semi-irrigated Land Owned & Operated (1)	Dry Land Owned and Operated
Cuba area (headwaters)	1881	2149	3528
Cabazon area (lower valley)	590	0	1692
TOTAL	2471	2149	5220

(1) Semi-irrigated land is here defined as land which is irrigated once or at most twice a year, and depends upon rainfall from July to harvest time. No other type of irrigated land exists within the Cuba Valley.

Table II

POPULATION OF THE CUBA VALLEY BY VILLAGES - 1936

Source: Soil Conservation Service Human Dependency Survey

Casa Salazar	112
Gundalupe	124
Cabazon	121
San Luis	190
La Ventana	43
Cuba	1208
Penistaja	84
La Jara	344
Regina	106
Unclassified as to residence	139

TOTAL	2471
-------	------

Table III
(1)
SIZE OF CONSUMPTION GROUPS - CUBA VALLEY, 1936

Source: Soil Conservation Service Human Dependency Survey

No. in Group	No. of Groups	Total Persons in Class
1	23	23
2	77	154
3	91	273
4	85	340
5	59	295
6	63	378
7	31	217
8	33	264
9	19	171
10	19	190
11	8	88
12	4	48
13	0	-
14	0	-
15	2	30
TOTAL		2471

Mode	3
Median	4
Average size of group	4.81
Range in Size of groups	1-15

(1) A consumption group is defined as a group of persons funding and sharing all forms of income.

THE UNIVERSITY OF CHICAGO
DIVISION OF THE PHYSICAL SCIENCES
DEPARTMENT OF CHEMISTRY

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RE: [Illegible text]

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Hendricks the following statistics relative to the destruction of the resource in irrigated land are presented:

1. At least twelve ditches and diversion works were destroyed in the Cuba Valley below Cuba between 1896 and 1931.

2. Of these twelve ditches eleven were built in 1872 and only one prior to 1872.

3. A total of 3600 acres of land was irrigated from these ditches in 1896.

In short, an acreage of irrigated land virtually equal to twice the present irrigated acreage was destroyed between 1896 and 1931.

In 1936 every acre of land in the lower valley depended upon local precipitation which seldom exceeds 15 inches annually. Dry farming under these conditions of precipitation has been characterized by frequent crop failure and uncertain livelihood.

The area around the headwaters of the Puerco provides some insight into the lower valley of twenty years ago. A process that has now almost fulfilled itself in the lower valley is midway along its course in the area above. Less than half of the land near Cuba on which crops are being raised is irrigated land. Even the land that is irrigated has water only until June and depends on midsummer rainfall to carry the crops to maturity. The deep arroyos on every side act as drainage

canals for land which, far from suffering from excess moisture, is on the verge of aridity. In the memory of a man who has lived in Cuba for less than twenty years, a one-time spring is now a twenty-foot well. In the brief lifetime of the single flour mill that serves the area, the production of wheat per irrigated acre has been cut in half, so that the significant difference in productivity which might once have obtained between irrigated and dry land is no longer so clearly marked. Irrigation farming which was once characteristic of the entire Cuba Valley is now characteristic of only its northern extremity and the future of irrigation agriculture even here appears to be brief.

In terms of the constantly diminishing resource in irrigated land and the uncertain productivity of dry farm land, it becomes of immediate importance to know to what extent and in what degree the 2500 residents of the Cuba Valley are dependent on cultivated land.

The farming resource consists at present of approximately 7500 acres in cultivation. Of these 7500 acres only 2149 are irrigated. If this land were distributed evenly among the entire population of the valley each consumption group would have 4 acres of semi-irrigated land and 10 acres of dry land; and this land would be planted to corn, wheat, beans, garden crops, and feed crops. Of these crops only

beans have a fairly reliable market. That is to say, at some price beans can be converted into goods which are required but not producible in the area. Corn is marketed almost exclusively as livestock feed and sold only during those periods when the range is so poor as to require supplemental feeding for the livestock in the area. Wheat and garden crops are virtually never sold. The only items of agricultural production which regularly supplement beans as a source of cash income are the feed crops. Alfalfa and oats are raised in small quantities for sale. However, cottonseed cake is growing rapidly in favor with those few larger livestock producers whose ranching operations involve supplemental feeding of livestock. The market for feed crops, which depends in any case on seasonal depletion of the range, is passing out of existence with the importation of concentrated feeds.

By the testimony of one of the residents of Cuba, the people in the Cuba Valley gave up farming fifteen years ago. A combination of land that was washing away, a water table that was lowering, and a market that existed only intermittently, framed the context in which farming began a steady decline. That farming is not ended in the Cuba Valley now, let alone fifteen years ago, is evident from an examination of the

Table IV

OWNERSHIP OF CULTIVATED LAND BY CONSUMPTION GROUP, CUBA VALLEY, 1936
(Dry and Semi-Irrigated Combined) (1)

Source: Soil Conservation Service Human Dependency Survey

Size of Holding (Acres)	Total No. Groups	Casa Salazar	Guadalupe	Cabezon	San Luis	La Ventana	Cuba	Penis-taja	La Jara	Regina	Unclassified as to Residence
0	165	12	5	11	10	3	90	7	12	7	8
1 - 5	50	0	0	2	2		36	0	6	1	3
6 - 10	67	5	6	2	5		30	0	13	0	6
11 - 15	67	3	6	3	7	1	31	2	10	2	2
16 - 20	47	3	2	2	4	1	18	2	10	2	3
21 - 25	29	1	3	1	4		8	0	3	5	4
26 - 30	19	1	2	1			11	1	2	0	1
31 - 35	5	0					2	1	0	2	0
36 - 40	19	1		1			8	2	3	3	1
41 - 45	4	0			1		1	0	0	3	0
46 - 50	13	1	1		2	1	8	0	0	2	0
51 - 55	2						1	0	1		0
56 - 60	5						4	1	0		0
61 - 65	1						1	0	0		0
66 - 70	2		1				2	0	0		0
71 - 75	2						0	0	1		0
76 - 80	3				1		0	2	0		0
81 - 85	2						1	0	0		0
86 - 90	1						1	0	0		1
91 - 95	1						1	0	0		0
96 - 100	4				1		0	2	0	1	0
101 & over	6			1			3	1	0	1	0
TOTAL	514	27	26	24	37	6	257	21	61	26	29

(1) Present information provides no accurate basis for differentiating the productivity of dry and semi-irrigated land in the Cuba Valley. The assumption is made in this table that there is no significant difference in the productivity of these two types of land.

Table V

OCCUPATION CLASSIFICATION OF PERSONS OWNING NO LAND
CUBA VALLEY, 1936

Source: Soil Conservation Service Human Dependency Survey

Individuals from Consumption Groups Owning no Land										
Type of Occupation	Area Total	Cabezon	Guadalupe	Casa Salazar	San Luis	La Ventana	Cuba	Regina	La Jara	Penistaja
Farm Hand	4						1	1	1	1
Cow Hand	1			1						
Sheepherder	18	1	1	1	1	1	10		3	
Domestic and Custodial	1		1							
Odd Jobs & Handyman	5	1					4			
Forest Work, Lumbering and Mining	3						2	1		
Railroad	1						1			
Artisans	3						2		1	
Retail Operators	8						8			
Trade Employees	3						3			
Government Employees	11	2					9			
Old Age Pension	2			1			1			
Truck Drivers	2						1			
Miscellaneous	2						2			
No Employment	33			7	3		12	3	5	3
Relief Work	61	5	3		4	2	36	1	7	3
TOTAL	158	9	5	10	8	3	92	6	18	7

activities of the population. Seventy-five hundred acres of land under the plow is by no means inconsiderable in the Southwest. Yet, the meaning of such a statement as the one made by the resident of Cuba is not obscure. It represents a shift in emphasis in the Cuba Valley from farming to other pursuits. It is a difficult undertaking to find a single group of people whose sole resource consists in the products of cultivated land.

The wheat, the beans, the corn, and the hay that the land still produces are as essential as ever before. But it has become apparent that whatever aspirations these people may have for those irreducible minima of traders' goods, clothing, coffee, sugar, tobacco, are increasingly less possible of realization through farming. Farming has become a subsidiary activity with an increasing dependence on livestock and cash income through wages and relief.

The ownership or use of livestock is more widely distributed through the valley than is the ownership or use of cultivated land. The total number of livestock, exclusive of horses and milk cows, is approximately 25,000 sheep, slightly more than 5,000 goats, and a little over 5,000 cattle. Of the 500 consumption groups, approximately 350 own land while 400 own livestock. About 45 per cent of the sheep, belonging

(1)

almost exclusively to Frank Bond & Sons, are rented on shares. Some 20 per cent of the cattle and 20 per cent of the goats are similarly rented. It is of some interest to compare the total renting of cultivated land--whether share-cropped or rented for cash--with the renting of livestock. Approximately 45 per cent of the sheep and 20 per cent of the range cattle and goats in the area are rented, while less than 15 per cent of the agricultural land is rented. Much of this 15 per cent is rented for purposes of livestock feed. The renting of livestock carries with it more risk and greater cost and yet it is the preferred form of tenancy.

In these comparative figures lies a clue to the significant difference between cultivated land and livestock in the economy of the Cuba Valley. Cultivated land by and large has only use value; livestock has exchange value. Cultivated land can be looked to only for the supply of a limited number of staples of diet; livestock opens the way to all of the variety of non-producible merchandise which has become characteristic of consumption in the Cuba Valley.

The development of livestock enterprises is, however,

(1) Large sheep operators with holdings throughout the Upper Rio Grande Watershed.

Table VI

OWNERSHIP OF CATTLE BY CONSUMPTION GROUP BY SIZE OF HERD - CUBA VALLEY, 1936

Source: Soil Conservation Service Human Dependency Survey

Size of Herd	Total No. Groups	Casa Salazar	Guadalupe	Cabezon	San Luis	La Ventana	Cuba	Penis-teja	La Jara	Regina	Unclassified as to Residence
0	219	3	5	7	17	2	143	1	23	3	15
1 - 5	179	8	6	6	17	4	83	8	25	15	7
6 - 10	36	5	1		1		13	5	5	2	4
11 - 15	27	2	3	5	1		8	2	2	2	2
16 - 20	13	2	4				4		1	2	
21 - 25	11	2	3				2		2	1	
26 - 30	6	2	1	1			1		1		1
31 - 35	0										
36 - 40	2	1						1			
41 - 45	4			2	1		1				
46 - 50	2	1								1	
51 - 55	1						1				
56 - 60	1							1			
61 - 65	2		1								
66 - 70	2			1							
71 - 75	2			1							
76 - 80	1			1				1			
81 - 85				1							
86 - 90											
91 - 95											
96 - 100	8	1	2				1	2	2		
101 & over											
TOTALS	514	27	26	24	37	6	257	21	61	26	29

Table VII

OWNERSHIP OF SHEEP AND COSTS BY CONSUMPTION GROUP BY SIZE OF HERD - CUBA VALLEY, 1936

Source: Soil Conservation Service Human Dependency Survey

Size of Herd	Total No. Groups	Casa Salezar	Guadalupe	Cabezon	San Luis	La Ventana	Cuba	Penistaja	La Jara	Regina	Unclassified as to Residence
0	399	23	23	21	26	2	203	18	47	19	17
1 - 50	61	2	1	1	4		32	1	8	4	8
1 - 10	29	2	0	1	2		16	1	1	1	5
11 - 20	10	0	0	0	1		5	0	3	1	0
21 - 30	11	0	0	0	0		5	0	2	2	2
31 - 40	8	0	1	0	1		4	0	2	0	0
41 - 50	3	0	0	0	0		2	0	0	0	1
51 - 100	12	1	1		1		4	2		2	1
101 - 150	3						3				
151 - 200	10		1		1		3		3		
201 - 250	6	1		2			2		1	1	
251 - 300	5				1		4				
301 - 350	4				2		1				
351 - 400	4				1						
401 - 450	1					2					
451 - 500	0					1					
501 - 550	1										
551 - 600	3				1		1		1		
601 - 650	1						1				
651 - 700	2					1	1				
701 - 750	0										
751 & over	2						1		1		
TOTALS	514	27	26	24	37	6	257	21	61	26	29

(1)
 sharply restricted. The grazing capacity of the Cuba Valley is estimated at 4300 cattle units yearlong. The present total stocking of the valley, including both domestic and range (2)
 stock, is 14,500 cattle units. Some undetermined part of these 14,500 cattle units are not dependent upon the range. A portion is corral and stubble fed. Of these 14,500 cattle units, 2,500 cattle units belonging to Bond have the use of Bond lands outside of the area for part of the year. The remaining stock dependent on the range are at least sufficient to overstock the range by 70 or 80 per cent. That is to say, 70 or 80 per cent of the total stock on the range would have to be removed to achieve grazing capacity.

The economy of the Cuba Valley is a highly diversified one and no analysis of any single factor of dependence can explain it. There is no significant land owning group distinct from a livestock owning group, and there is no significant wage-earning group distinct from either of these. There is an intimate relationship between income from land, livestock, and waged work.

(1) Estimated on the basis of sustained use.

(2) Soil Conservation Service Human Dependency Survey. A cattle unit is equal to one horse, mule, or burrow or four sheep or four goats.

This relationship is highly characteristic of many other areas of settlement in the Rio Grande Valley. The emphasis shifts from area to area but the presence of a diversified income from land, livestock, and wages is characteristic of all such areas.

In the Cuba Valley land serves primarily to supply staples of diet and its major characteristic is the direct consumption without exchange of the crops produced. Livestock raising, although providing a far-from-negligible meat supply, is principally characterized by commercial exchange. Cash income from wage work supplements both ranching and farming.

In the Cuba Valley wage work represents a considerable resource. In 1936 there were only 196 out of 500 groups who received no income from wage work. In aggregate, combining the income from both relief and non-relief wage work a total of \$107,000 was paid out in wages to the residents of the Cuba Valley. The largest salary in the area is one of \$4,000. The next largest salary is \$1800. Sixty per cent of the population in the area have shared in this total. Of this \$107,000 slightly more than 40 per cent has been relief work and the balance has come from a variety of non-relief sources.

In the Cuba Valley it would be impossible to maintain the resident population from its land and livestock resources.

On the basis of studies conducted in this area there is some reason for believing that the Spanish-American population in the Cuba Valley, although owning both land and livestock, deriving income from both land and livestock, may yet have passed that point in the ownership of productive resources at which land and livestock become supplementary income for a predominantly wage-working population.

And yet, the labor market for the population of the Cuba Valley is not extensive. The sheepmen require a few herders, the merchants a few clerks. A few farmers employ farm hands, an occasional lumbering operation provides intermittent wages.

Seventeen miles due south of Cuba is the mining town of La Ventana. But these mines, employing approximately 100 men at the height of the season, find very few of their employees among the residents of the valley. The payment of wages to the miners depends upon the sale of coal. These mines have no regular outlet or stable market and rely entirely upon independent truckers to market their coal. Consequently, employment and wages are irregular. Employees are paid on a piece-work basis, and production is low because of the amount of "dead work" involved in mining a ton of marketable coal. The labor turnover is reported to be very little less than 100 per cent

annually.

Labor opportunities of a seasonal nature exist outside of the valley. There is some market for labor in the beet fields and sheep camps of Colorado. However, this market has contracted sharply since 1930 and at present affords little opportunity to the residents of the Cuba Valley.

The major single source of income from labor has been afforded by the various relief agencies operating in the area who have contributed almost half of the total cash income from wages during 1936.

As it was pointed out earlier, the total resource in cultivated land would provide each consumption group with but 4 acres of semi-irrigated land and 10 acres of dry land. The total resource in forage would sustain only 8 head of cattle per group. It, therefore, becomes probable that either some regular form of wage income must be present or an extensive program of resource development must be undertaken. The possibilities for the development of new resources are not yet known. The necessary physical surveys of the area have not as yet been undertaken and any projection of this type of adjustment must wait upon this information.

The present condition of land resources in the Cuba Valley is no sudden catastrophe. Each successive year increases



Table VIII

NON-RELIEF WAGE WORK BY CONSUMPTION GROUPS BY SIZE OF NON-RELIEF WAGE EARNINGS -
CUBA VALLEY, 1936

Source: Soil Conservation Service Human Dependency Survey

Wage Class	Total No. Groups	Casa Salazar	Guadalupe	Cabezon	San Luis	La Ventana	Cuba	Penis-taja	La Jara	Regina	Unclassified as to Residence
0	380	18	23	12	34	4	176	20	48	22	23
\$1 - \$100	33	3		2	2	1	20		3		2
1 - 50	17	2			1	0	9		2		1
51 - 100	10	1		0	1	1	11		1		1
101 - 200	27	5	1				14		6	1	1
201 - 300	16	1	2	3		1	8	1	1	1	1
301 - 400	14			1	1		6	1	1	1	1
401 - 500	7			1			5	1	1		
501 - 600	10		2	1			8		1		
601 - 700	2			2			2				
701 - 800	7						3			1	1
801 - 900	2						2				
901 - 1000	3						3				
1001 - 1100	3						3				
1101 - 1200	2						2				
1201 - 1300	1			1			0				
1301 - 1400	2						2				
1401 - 1500	1			1			1				
1501 & over	4			1			2			1	
TOTAL	514	27	26	24	37	6	257	21	61	26	29

Table IX

OCCUPATIONAL CLASSIFICATION, CUBA AREA, 1936

Source: Soil Conservation Service Human Dependency Survey

Type of Employment	No. of Persons Employed	Casa Salazar	Guadalupe	Cabezon	San Luis	La Ventana	Cuba	Penis-taje	La Jara	Regina	Unclassified as to Residence
Farm Hand	7						4	1		2	
Cow Hand	4	2					2				
Sheep Herder	50	4	1	4		1	24		7	1	4
Domestic and Custodial (1)	6		2	2			1				1
Odd Jobs and Handymen	10			1			7		1	1	
Forest Work, Lumbering & Sawmills	7	1					5			1	
Mining	6						6				
Railroad	2				1		1				
Artisans (2)	7						6				
Retail Operators (3)	21	1			1		16		1		1
Trade Employees	7						6				
Government Employees (4)	36						21	3		1	2
Old Age Pension	9					1	6	1			
Truck Drivers	4	1					1				
Miscellaneous	3			1			1			1	
TOTALS	179	9	3	18	6	2	107	5	14	7	8

(1) Includes janitors, caretakers, houseworkers, nurses

(2) Includes barber, mechanics, brick-mason, baker, blacksmith, cook, carpenter

(3) Includes storekeepers, saloon keepers, traders, service station operators

(4) Includes school teachers, postmasters, other state, county & federal employees

the destruction and decreases the resource, but the process has
(1)
not been continuous over a period of years. In the course
of this period the people of the Cuba Valley have been almost
constantly faced with the necessity for making adjustments.

The past of the Cuba Valley has seen many attempts by
the population to meet the increasing restrictions that the
inadequacies of their resources imposed. There have been
migrations of at least two sorts: (1) a movement to the
less destroyed lands near the headwaters of the Puerco;
(2) a labor migration to the principal labor markets of the
Southwest while retaining a fixed residence in the valley.
It is not known to what extent people have moved out of the
area permanently.

Partially in response to the decrease in grazing lands
available for use, a system of tenant herding has grown up.
After the loss of the dam at Cabezón, bootlegging of liquor
became prominent in the lower valley. With the advent of
a federal relief program, relief became a basic resource; with
the coming of a rehabilitation program, agricultural credit
became a dominant feature. For most of the brief history of

(1) In limited portions of the Cuba Valley the Soil Conser-
vation Service has recently introduced cultivation prac-
tices and range management designed to conserve soil and
moisture.

the Ohio Valley there has been a constant adjustment going on. This adjustment has at best been only temporarily successful, and has in most instances proved inadequate to meet the accelerated and continuous dwindling of resources.

A detailed treatment of three of these adjustments will contain many elements of interest. One of these, tenant herding, is an adjustment which grew out of a complex of elements largely contained within the area itself. The second, Rural Rehabilitation, came about as an imposition of a national policy of agricultural relief on a peculiarly unsuited area. The third and the most widespread has been Federal relief.

TENANT HERDING IN THE CUBA VALLEY

As it is generally understood, tenancy relates primarily to the use, under varying contractual arrangements of non-ownership, of cultivated land. In urban areas it refers principally to the renting of homes. In an area of range land it is concerned with the leasing of land and the renting of livestock. It is this last form of tenancy that is here called tenant herding.

(1)

In 1840 one of the early travellers to this area observed and commented on the existence of a partido system, a system by which an owner of large numbers of sheep rented these sheep at a constant rent to herders who agreed to accept full responsibility and pay the entire costs of operations.

Because this system is an old one, and because it was observed to have, both then and now, a predominantly Spanish-American personnel, responsibility for it has been ascribed to either a feudal system or a unique Spanish-American culture or both.

Tenant herding, however, exists in other areas, e.g., Montana, settled long after New Mexico--areas which have no remote connection with feudalism.

(1) Josiah Gregg: Commerce of the Prairies, 1844, page 122.
Edition of April, 1933.

That tenant herding is not a unique Spanish-American custom is clear from the fact that the area of tenant herding is not coextensive nor continuous with areas of Spanish-American occupation. That tenant herding is not a feudal survival seems equally clear from the organic relationship that it bears to modern forms of business enterprise.

It is sometimes argued that in New Mexico large operators who let their stock on shares are the psychological substitutes for the older Spanish patron who cared for his peons. If this is true, it will be equally true that certain rural banks in the range livestock area of the west are equally feudal and paternalistic.

These are arguments which are often advanced and arguments which grow no better with time. The similarity between New Mexico and Montana lies not in a common Spanish-American culture and not in similar feudal remains, but in a contemporary condition of land control which is characteristic of both. Tenant herding, as it is now found, begins from a concentration in the ownership or control of the grazing resources which renders the development of independent livestock enterprises virtually impossible and renders the survival of small independent livestock operations difficult in the extreme.

Tenant herding in the Cuba Valley is a contractual agreement between a large sheep owner (Bond in this case) and about



twenty-five tenants whereby these tenants agree to run sheep on a rental basis. Bond supplies breeding herds varying from a few hundred to 2100 sheep. The renter contracts, in exchange for the right to use these sheep, to return 20 lambs, averaging at least 55 pounds in weight, for every hundred ewes in the herd. The tenant further contracts to rent rams from the owner, sell his lambs and wool through the owner and stand responsible for all operating expenses and all losses. The renter agrees to feed when the owner believes that his sheep require feeding, to return upon demand a breeding herd of the same size and age as that originally rented to him, and to secure this return with any sheep that he may own.

In exchange for this, the tenant gains the right to the total wool clip, all lambs in excess of 20 lambs per hundred ewes, and, most important, the right to graze his own sheep on Bond's land along with his rented herd. This privilege does not involve free use. The renter generally pays Bond 15 cents a head for winter grazing on Bond's land, 12 cents a head for a forty-day lambing period, and 17 $\frac{1}{2}$ cents per head for 2- $\frac{1}{2}$ months summer grazing in the Baca location. (1) This charge is levied for every head of sheep grazed,

(1) An old Spanish land grant, the grazing rights of which are owned by Frank Bond and Co.



irrespective of ownership.

Each of the renters in the Cuba Valley was, before he became a tenant, an independent sheep owner. Of these twenty-five, only 15 have a herd of their own at present. The remaining 10 have lost all share in ownership through the operation of this form of tenancy.

Yet, in every case it was to increase their herds and the earnings from their herds that these twenty-five became tenants. The older tenants saw in this form of tenancy a quick means of acquiring capital necessary to expand their operations. Land was then relatively plentiful and land was free. It seemed an opportunity to expand their enterprises painlessly. However, in the course of years of this type of tenancy their ownership of sheep has contracted rather than expanded.

The second group of tenants, and the larger group, has come to tenancy more recently. These were the sheep owners who found that there was no range for their livestock, who found that desirable state leases were largely monopolized and railroad leases were for larger railroad patrons; who found that National Forest lands were preempted and the public domain land overcrowded. For these sheepmen there was no practical alternative to tenant herding. Either range had to be found or the sheep business abandoned. The means to additional range was tenant herding. So another group attempting to preserve their equity in the livestock business by this

means have gradually lost their equity.

At present 10,000 of 25,000 sheep in the Cuba Valley are rented. Of the 5,000 goats, 1,000 are rented. Of the 5,000 range cattle, 1,000 are rented.

Should that exceptional series of events occur whereby the tenant herder accumulates livestock of his own or increases his ownership of livestock, we have evidence from another area to indicate the probable consequence. In the main valley of the Rio Grande east of the Cuba Valley where this situation occurred, the renter terminated his contract with Bond and attempted to establish himself as an independent sheepman. Range was not available to him. He was obliged to dispose of his sheep holdings. His sheep were purchased by Bond and issued to him on a rental basis.

Tenant herding in the Cuba Valley, then, is neither an historical accident of geography and culture nor a vestigial remain of feudal forms. It bears an organic relationship to the complex series of factors which make up contemporary conditions of land use. These same circumstances have a variety of expressions here and elsewhere. A concentration in the ownership of resources will express itself variously. Tenant herding is but one of these expressions.

Yet, in the Cuba Valley a concentration in the ownership of resources does not have precisely the same meaning as it has in the Middle West or the South. The largest land owner here

Table X

USE OF GRAZING LANDS EXPRESSED IN COW MONTHS
BY RESIDENCE OF OPERATORS - CUBA VALLEY, 1936

Source: Soil Conservation Service Human Dependency Survey

Where Grazed	Total Cow Months (1)	Cabezon	Guada- lupe	Case Salazar	San Luis	Le Ventana	Cuba	Regina	La Jara	Penis- taja	Uncles- sified
Public Domain	56,240	8,054	9,915	5,589	12,628	684	8,325	1,098	5,742	4,205	0
U.S. Forests	19,044	0	1,440	3,400	0	0	10,463	615	2,244	0	882
Privately Owned Used	38,225	553	1,078	1,640	3,114	1,329	14,368	2,556	6,697	2,336	4,554
Privately Owned Rented	37,206	120	36	0	849	2,445	12,955	114	18,129	1,925	633
TOTAL	150,715	8,727	12,469	10,629	16,591	4,458	46,111	4,383	32,812	8,466	6,069

(1) Based on each cow representing 12 cow months use of all lands detailed above.

is the government. Approximately 75 per cent of all the land in the area is government-owned. The northern boundary of the valley is the southern tier of townships of the Jicarilla Reservation under lease to a large sheep owner. To the east is a continuous boundary of National Forest and government purchase. These lands, under present policies of use, are not widely available to the residents of the Cuba Valley. To the west is the proposed Navajo boundary, to the south, railroad leases in the name of Frank Bond, and more National Forest. These are boundaries in more than a geographic sense. They are economic boundaries as well.

Within the Cuba Valley itself the federal ownership of land consists predominantly of public domain lands. Nearly 40 per cent of the use of all lands in the Cuba area was use of public domain lands. A grazing district has been established under the Taylor Grazing Act which includes the vacant lands of the valley. An analysis of the licenses to graze issued in this (1) area discloses the following:

1. Of the 30,000 sheep and goats owned or operated by the residents of the Cuba Valley only 8,000 are permitted the use of public domain.

(1) Derived from data prepared by the Division of Grazing and submitted to the Interdepartmental Rio Grande Committee.

2. These 8,000 represent only 35 owners or operators as opposed to the 115 owners or operators represented by the 30,000 sheep and goats in the valley.

3. Seventy-three per cent of the sheep and goats and 79 per cent of their owners or operators are legally excluded from the use of public domain.

4. The average size of herd of those sheep owners or operators licensed to use public domain is 325 head. The average size of herd of all sheep owners or operators is 260 head.

5. Nine owners were listed by the Soil Conservation Service Human Dependency Survey as resident in the Cuba Valley and owning 500 or more sheep and goats. Licenses were granted by the Division of Grazing to 9 operators owning 500 or more sheep and goats--this notwithstanding the fact that 79 per cent of the owners are legally excluded from use.

6. Of the 5,000 range cattle owned in the area, approximately 1,500 cattle are licensed to graze on public domain.

7. These 1,500 represent 35 owners of range cattle as opposed to 116 owners of range livestock represented by the 5,000 range cattle in the valley.

8. Seventy per cent of the range cattle and 79 per cent of the owners are legally excluded from the use of public domain.

9. The average size of herd of those cattle owners licensed to use public domain is 60 head. The average size of

herd of all range cattle owners is 40 head.

10. Half of the total licensed cattle in this area is one ownership.

The prospect for the Cuba Valley is one of increasing tenancy and decreasing ownership. On the basis of the estimated grazing capacity, the entire area can support no more than domestic animals and rented livestock. From one point of view, all independently owned sheep, goats, and cattle represent a surplus livestock population--a livestock population which is in excess of the carrying capacity of the range. Whether these independently owned stock will be in fact the surplus stock cannot be predicted with any assurance. However, what evidence is available on the trend for tenant herders in the ratio of independently-owned stock to bond-owned stock is in some support to this supposition.

RURAL REHABILITATION IN THE CUBA VALLEY

Early in 1935 the federal government, as part of its national program of agricultural relief, instituted a credit program for distressed farmers. This program was conducted through a series of agricultural loans made by the Rural Rehabilitation Division of the Resettlement Administration. The theory was that one of the major deterrents to agricultural recovery was the lack of agricultural credit. If credit could be extended to those rural groups, which by reason of a lack of adequate security were ineligible for credit assistance through regular non-government channels, except at insupportable interest rates, classical processes of investment and return on investment would provide a significant measure of agricultural relief.

This theory was in no way altered for the Cuba Valley. In 1935 and 1936 loans totalling \$75,000 were issued, a sum approximately equalling the total expenditure in these two years for relief. Of this \$75,000, only \$6,000 has been repaid. The great bulk of these loans were not long-term loans but loans due in the fall or winter of the year in which they were issued and subsequently refinanced. The delinquency in December, 1936, on all moneys loaned was estimated by the county rehabilitation office to be 90 per cent.

The Rural Rehabilitation Division Could, if they so desired, own approximately one-third of all of the chattels in the Cuba Valley. And yet, presumably the extension of this credit was designed in part to increase the equity of the population in the resources upon which they depend. The effect has been to mortgage a substantial portion of the livelihood of the residents of the Cuba Valley to the government.

It is doubtful if this mortgage can ever be satisfied. The assumption that the simple extension of credit would meet the requirements of the Cuba Valley was totally without foundation. The extension of credit has meant only the extension of debt.

This is an experience which is not unique to the Cuba Valley. It is repeated in similar areas in the Rio Grande Valley. It derives from a set of circumstances which sets the largely non-commercial population apart from national programs of agricultural relief.

Cultivated holdings in the Cuba Valley are relatively small and uncertain as to productivity. Land use is diversified, aiming more at the production of a stable food supply than at continuously increasing exports. Markets are limited and bound up with a system of local trading in which the credit operations of the local storekeeper are predominant. Resources are limited and contracting on the one hand through concentration in the ownership of resources, and on the other hand through the consequences of non-conservative use. Dependence upon wage work and

relief is increasing.

What are the possible functions of credit in a situation such as this? To begin with, it might operate to reduce costs. The principal costs lie in the system of retail trading and individual marketing. It has not affected these. If the need for credit was an expression of the fundamental inability of a population to subsist on its present resources, repayment of loans could be predicated only on some increase of those resources. Or, if the need for credit was predicated on the high cost of credit, repayment could be predicated only on some reduction of those credit costs. Neither the insufficiency of resources nor the high cost of credit were materially affected by the rehabilitation program.

Yet the Resettlement Administration through its Rehabilitation Division remains the agency most broadly equipped to deal with these problems. And the Cuba Valley, by reason of the high costs of tenant herding, the high cost of consumption, and the high cost of marketing, offers broad opportunities.

But one central thread runs through the rehabilitation program--a thread akin to a social philosophy. Every loan in the Cuba Valley was individually conceived; every plan was an individual plan. Each farmer was distinct and so was his neighbor. Each failure was a special case and likewise each success. Every problem was unitary, discrete, exceptional. And yet, in

reality there were no individual problems which were understandable without reference to the adjoining one.

The problems of the Cuba Valley are not the assorted problems of a various and diverse population, but rather the single complex of problems which belongs to the area as a whole. For this reason, any program of adjustment, and essentially Rural Rehabilitation is a program of adjustment, which insists on the exceptional nature of each case to the exclusion of the broader complex to which it belongs is likely to fail.

Just how serious a failure this may be awaits future administrative action. A ninety-per-cent delinquency and an outstanding indebtedness of almost \$70,000 is a huge debt for the Cuba Valley--a debt which it can pay only through dispossession. Annually the debt increases as new loans are made and annually the likelihood for repayment decreased.

There appears to be no middle ground between an outright grant and some type of collective adjustment. If it is the permanent policy of the Rehabilitation Division to deal with each individual case, to so select its individual risks that the delinquency will not exceed 90 per cent, then the only reasonable program is one of direct subsidy. If short of physical resettlement of these people there exists the possibility of adjustment which will recognize that the individual is in no sense a unit of planning, that credit is not a resource apart from the productive use to which it can be put, there is an important potential function for the Resettlement Administration in the Cuba Valley.

RELIEF IN THE CUBA VALLEY

Approximately half of the consumption groups in the Cuba Valley have, during 1936, received some form of relief income. This has reached the sum of \$46,000. Relief has become the prevailing, the most widespread, and in some ways the most successful form of adjustment that has been undertaken.

For all practical purposes relief is a form of wage work subsidized by the government and supplemental to private labor opportunities. Of every \$100.00 in cash which is available to the residents of the Cuba Valley from the sale of labor, \$45.00 is contributed by relief. Insofar as it may be said that wage employment is one answer to the needs of the population, relief is an alternative to wage employment.

The relief population is of special interest because, by definition, they represent the most needy individuals in the Valley. They represent that portion of the population which by reason of the inadequacy of their share in income have been judged to require federal and state assistance.

It will be of particular interest, then, to examine the characteristics of the relief population with a view to determining what share in the resources of the area this population possesses. For this purpose, the dependency characteristics of

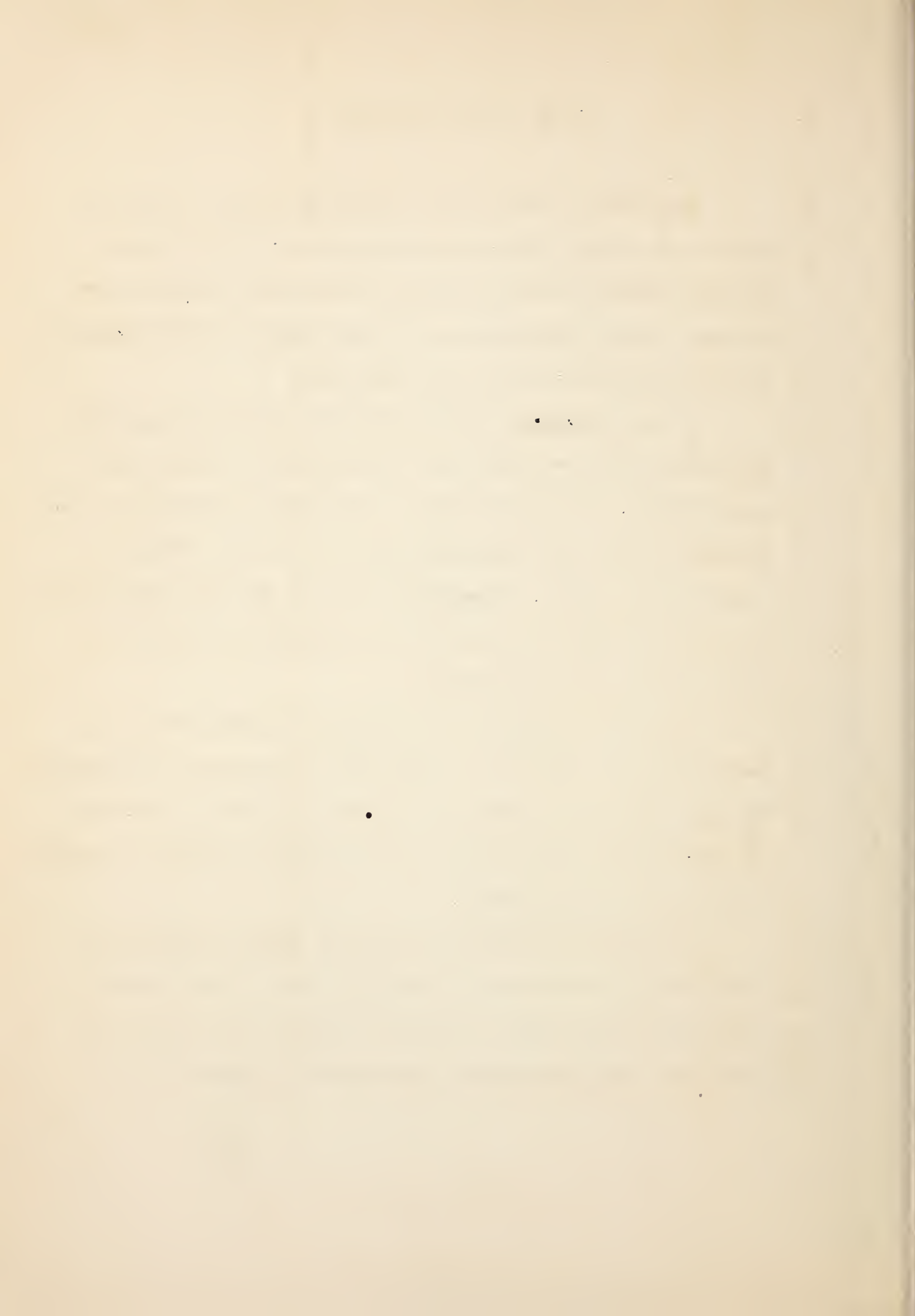


Table XI

RELIEF WAGE WORK BY CONSUMPTION GROUPS BY SIZE OF RELIEF WAGE EARNINGS - CUBA VALLEY, 1936

Source: Soil Conservation Service Human Dependency Survey

Wage Class	Total No. Groups	Casa Salazar	Guade- lupe	Cabezon	San Luis	La Ventana	Cuba	Penis- taja	La Jara	Regina	Unclassified as to Residence
0	314	17	10	12	10	2	168	19	33	20	23
1 - 50	22	2		1	4	1	8	1	5		
51 - 100	47	3	6	2	19		15	1	1		
101 - 150	22	1	5	4	1		8		1	1	1
151 - 200	17	3	2	1	1		9		1	1	
201 - 250	11	1	1	2	1		6				
251 - 300	18		1	1		2	10		2	1	1
301 - 350	2						1		1		
351 - 400	8			1	1	1	5				
401 - 450	13						11			2	
451 - 500	27						9		14		4
501 - 550	6		1				3		1	1	
551 - 600	4						3		1		
601 & over	3						1		2		
TOTALS	514	27	26	24	37	6	257	21	61	26	29

the relief population, with reference to the three important resources -- land, livestock, and non-relief wage work -- will be discussed.

A fifty-per-cent sample of the relief population has been selected at random. The table which follows raises this fifty-per-cent sample to the total population, both relief and non-relief, of the area. The total number of persons included in the relief sample is just over 500. The total population of the area is approximately 2500. The following tabulation multiplies the land, livestock, and non-relief wage income, possessed by the relief population, by 5 in order to determine in what respects the relief population varies from the total population. In short, if the relief population were a representative sample of the total population, there would be no difference between the actual totals for the area and the relief totals multiplied by five. The differences that do obtain, it is believed, express the differences between the relief population and the total population with reference to their respective shares in the ownership of resources.

It should be noted that if the following comparison were conducted between the relief and the non-relief population as opposed to the total population, the differences would be even more striking.

Table XII

COMPARISON OF THE RESOURCES OF THE TOTAL POPULATION AND THE RELIEF
POPULATION IN LAND, LIVESTOCK, & NON-RELIEF WAGE INCOME - CUBA VALLEY, 1936

Source: Soil Conservation Service Human Dependency Survey

	Land Owned & Operated		Cattle & Horses		Sheep & Goats		Non-Relief Wage Work
	Irrigat- ed	Dry	Owned & Operated	Oper- ated	Owned & Operated	Oper- ated	
Total Population	2149	5220	6399	945	15,151	11,496	61,470
Relief Population	285	3930	3550	335	8,280	5,135	20,755

In every category considered, the relief population is extremely adversely situated with reference to the total population. The most extreme instance is represented by irrigated land. If the total population had the same share in the ownership of irrigated land as the relief population, the present ownership would be reduced from 2149 acres to 285, a reduction of more than 85 per cent. The situation is not nearly so extreme in the instance of the less-valuable dry lands where the share of the relief population is only 25 per cent less than that of the total population.

In the ownership of livestock the relief population is again at a severe disadvantage. If the characteristics of the relief population were not distinct, the present ownership of cattle and horses would be 5550 instead of the 6400 which actually obtains. The invidious nature of this comparison will become all the clearer when it is realized that the relief population would be at a disadvantage even so far as tenant herding is concerned. Were the recipients of relief representative, only 335 cattle would be rented instead of the 945 which actually are rented.

These ratios hold throughout. Present ownership of sheep and goats would be reduced by half, tenant herding of sheep and goats by slightly more than half. Non-relief wage work would be reduced by two-thirds.

There are several inferences that may be drawn from this comparison. First, and perhaps most important of all, is that the deficiency of the relief population is not confined to any single means of livelihood. It is characteristic of all three major means of livelihood. This may suggest, in view of the absolute deficiency of resources, that in an economy as diversified as that of the Cuba Valley there may be no single resource, with the exception of wage work, which can satisfy the requirements of livelihood.

This comparison may offer a rough measure of the extent of the adjustment necessary to make the Cuba Valley relatively self-supporting. Bearing always in mind that the extent of the adjustment is even greater than that indicated in the foregoing table, since the base of comparison for the relief population is not the non-relief population but the total population, an extensive development program would be required merely to bring the relief population to the level of livelihood of the non-relief population.

A glance at the status map with which this report is prefaced will provide some insight into the possibilities of expanding livestock activities. Each class of status which is distinguished carries with it a well defined policy of use. In general this policy operates to restrict use by the bulk of the residents of the Cuba Valley. This, plus the present overstocked condition of the range, will indicate the proportions of the task. The

possibilities of developing cultivated land will be undetermined until an adequate physical survey of the area is undertaken.

The Cuba Valley is an area vested with public responsibility to an extent that few other areas are. Within the Cuba Valley itself the predominant land holdings are government holdings. The valley is bounded on three sides by government land. Large annual relief and rehabilitation expenditures have been made. The Cuba Valley cannot be the responsibility of any single government agency for no single jurisdiction is adequate to deal with the varied problems that are present. As a field of joint government responsibility, however, the Cuba Valley represents an exceptional opportunity.

BIBLIOGRAPHIC NOTE

The quantitative information contained in this report derived largely from a survey of human dependency on resources conducted by the Soil Conservation Service in 1936. This survey using a rigidly controlled schedule and operating under specific and detailed instructions covered the total population of the Cuba Valley with respect to the productive activities of this population.

This information was supplemented by frequent recourse to the files of the local Works Progress Administration and Rural Rehabilitation offices. In addition, selected interviews with members of the various occupational groups represented in the Cuba Valley provided a basis for the interpretation of the statistical material obtained.

